

## PATENT ABSTRACTS OF JAPAN

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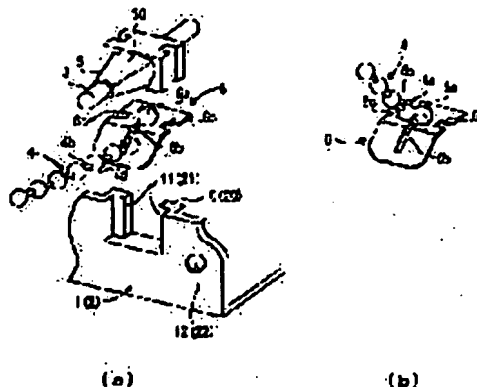
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## (54) TRANSMITTER/RECEIVER FALLING PREVENTING STRUCTURE

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To produce this transmitter/receiver falling preventing structure manufactured at low costs and in a short term of delivery by improving assembly workability.

**SOLUTION:** A transmitter/receiver 2 connected through a spiral code 3 to a case body 1 is constituted so as to be prevented from falling on a floor. In this case, a ball chain 4 is fixed along the spiral code to both edge parts 30 and 30 of the spiral code, and the edge parts of the chain are respectively held by holding fittings 6 and 6 so that the spiral code can be prevented from being extended when the transmitter/receiver falls. The holding fittings are respectively fit to a spiral code fitting part 20 of the transmitter/receiver and a spiral code fitting part 10 of the case main body. Also, the spiral code fitting part of the transmitter/receiver and the spiral code fittings part of the case main body are provided with bushings 5 to be fit to ribs 21 and 11 of the transmitter/receiver and the case main body at the both edge parts of the spiral code, and the holding fittings are provided with recessed parts 6c to be respectively fit to the ribs of the transmitter/receiver and the case body.



## LEGAL STATUS

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## CLAIMS

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### [Claim(s)]

[Claim 1] In order to carry out fall prevention of the transmission-and-reception machine (2) connected to the case main part (1) in spiral code (3) on a floor In preventing that said spiral code develops when flexible line material (4) is fixed to the both ends (30, 30) of said spiral code along with said spiral code and said transmission-and-reception machine falls It is the transmission-and-reception machine fall prevention structure which is equipped with the maintenance metal fittings (6, 6) for holding each end of said flexible line material, and is characterized by attaching said maintenance metal fittings in the spiral code fitting part (20) of said transmission-and-reception machine, and the spiral code fitting part (10) of said case main part, respectively.

[Claim 2] The spiral code fitting part of said transmission-and-reception machine and the spiral code fitting part of said case main part have bushing (5) which fits into the rib (21, 11) of said transmission-and-reception machine and said case main part in the both ends of said spiral code. Said maintenance metal fittings are transmission-and-reception machine fall prevention structure according to claim 1 characterized by having the crevice (6c) which fits into the rib of said transmission-and-reception machine and said case main part.

## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

#### [0001]

[Field of the Invention] This invention relates to transmission-and-reception machine fall prevention structure equipped with the attaching part article for starting the transmission-and-reception machine fall prevention structure of an interphone or telephone, especially holding a chain.

#### [0002]

[Description of the Prior Art] As the interphone by which this kind of transmission-and-reception machine fall prevention structure is applied is shown in drawing 3, in order that the transmission-and-reception machine 60 may be connected to the case main part 50 in spiral code 70 and fall prevention of this transmission-and-reception machine 60 may be carried out on a floor from the former The ball chain 80 is fixed to the both ends 700 and 700 of the spiral code 70 concerned along with the spiral code 70.

[0003] As shown in drawing 4 (a), the both ends 700 and 700 of the spiral code 70 are specifically equipped with bushing 90. One bushing 90 has fitted into the rib 601 with which the spiral code fitting part 600 of the transmission-and-reception machine 60 has the bushing 90 of another side at the rib 501 which the spiral code fitting part 500 of the case main part 50 has,

respectively. In addition, since each spiral code fitting parts 500 and 600 of the case main part 50 and the transmission-and-reception machine 60 are the same structures, they shall attach and explain both marks in the figure of one spiral code fitting part.

[0004] The chain through hole 502 where each end of the ball chain 80 was punched at the case main part 50, It is inserted in the chain through hole 602 punched at the transmission-and-reception machine 60, and After insertion, The chain clasp implement 100 engages with each end of the ball chain 80, and the chain clasp implement 100 of another side is screwed to the fixed boss 603 installed inside the transmission-and-reception machine 60 with the screw 200 by the fixed boss 503 inside whom one chain clasp implement 100 was installed by the case main part 50, respectively.

[0005] In addition, as the chain clasp implement 100 is shown in drawing 4 (b), the ball hole 100a which can insert the ball 80a of the ball chain 80 in the both ends of metal fittings is punched. These two ball holes 100a and 100a are opened for free passage in the slit hole 100b which can stop [ that the link 80b of the ball chain 80 can be inserted in, and ] Ball 80a. Such a chain clasp implement 100 the ball 80a of the ball chain 80 in the ball hole 100a After insertion, The link 80b connected with the ball 80a made to insert in is inserted in the slit hole 100b, and it is made to engage with each end of metal fittings which it bends in the shape of [ of U ] a character, and is the ball chain 80 as it is made to move to a center mostly and is shown in drawing 4 (c). Thereby, the ball 80a of the ball chain 80 is stopped by the slit hole 100b of the chain clasp implement 100. And a screw 200 is inserted in the ball holes 100a and 100a of the chain clasp implement 100 bent in the shape of [ of this U ] a character, and the chain clasp implement 100 concerned is screwed to the fixed boss 503 of the case main part 50, and the fixed boss 603 of the transmission-and-reception machine 60, respectively.

[0006]

[Problem to be solved by the invention] However, with such conventional transmission-and-reception machine fall prevention structure, since screw clamp work was needed in order to hold the ball chain 80, the man day had started this screw clamp work. Moreover, since the ball chain 80 must be fixed inside the case main part 50 or the transmission-and-reception machine 60 In order to pull out the ball chain 80 outside from the inside of the case main part 50 or the transmission-and-reception machine 60, the chain through holes 502 and 602 needed to be established in the case main part 50 or the transmission-and-reception machine 60, respectively. Furthermore, since this hole processing turned into post-processing, while cost went up, there was a difficulty that time for delivery is overdue.

[0007] This invention was made in order to solve such a conventional difficulty, it raises assembly processability, and aims at offering transmission-and-reception machine fall prevention structure producible in low cost and quick delivery.

[0008]

[Means for solving problem] [ the transmission-and-reception machine fall prevention structure of this invention of attaining the above-mentioned purpose ] In order to carry out fall prevention of the transmission-and-reception machine connected to the case main part in spiral code on a floor In preventing that a spiral code develops when flexible line material is fixed to the both ends of a spiral code along with a spiral code and a transmission-and-reception machine falls It has the maintenance metal fittings for holding each end of flexible line material, and maintenance metal fittings are attached in the spiral code fitting part of a transmission-and-reception machine, and the spiral code fitting part of a case main part, respectively.

[0009] Only by according to such transmission-and-reception machine fall prevention structure, equipping each end of flexible line material with maintenance metal fittings, and attaching these maintenance metal fittings in the spiral code fitting part of a transmission-and-reception machine, and the spiral code fitting part of a case main part, respectively Since it can prevent that a spiral code develops when a transmission-and-reception machine falls, assembly processability is raised and it can produce in low cost and quick delivery.

[0010] Moreover, in the transmission-and-reception machine fall prevention structure of this invention [ the spiral code fitting part of a transmission-and-reception machine, and the spiral code fitting part of a case main part ] Having bushing which fits into the rib of a transmission-and-reception machine and a case main part in the both ends of a spiral code, maintenance metal fittings have the crevice which fits into the rib of a transmission-and-reception machine and a case main part. [ after this fitting into the rib of a transmission-and-reception machine and a case main part.the crevice of the maintenance metal fittings with which each end of flexible line material was equipped / the crevice of bushing with which the both ends of the spiral code were equipped further ] only by fitting into these ribs When a transmission-and-reception machine falls, it can prevent that a spiral code develops.

[0011]

[The form of the actual condition of invention] The example of a form of the desirable operation in the transmission-and-reception machine fall prevention structure of this invention is hereafter explained in full detail with reference to Drawings.

[0012] As the interphone by which the transmission-and-reception machine fall prevention structure of this invention is applied is shown in drawing 2 , in order that the transmission-and-reception machine 2 may be connected to the case main part 1 in spiral code 3 and fall prevention of this transmission-and-reception machine 2 may be carried out on a floor The ball chain 4 which is flexible line material is fixed to the both ends 30 and 30 of the spiral code 3 concerned along with the spiral code 3.

[0013] As specifically shown in drawing 1 (a), the both ends 30 and 30 of the spiral code 3 are equipped with bushing 5. One bushing 5 has fitted into the rib 21 with which the spiral code fitting part 20 of the transmission-and-reception machine 2 has the bushing 5 of another side at

the rib 11 which the spiral code fitting part 10 of the case main part 1 has, respectively. In addition, since each spiral code fitting parts 10 and 20 of the case main part 1 and the transmission-and-reception machine 2 are the same structures, they shall attach and explain both marks in the figure of one spiral code fitting part.

[0014] Moreover, each end of the ball chain 4 is equipped with the maintenance metal fittings 6 and 6, and the maintenance metal fittings 6 can be made to attach in the spiral code fitting part 20 of the transmission-and-reception machine 2, and the spiral code fitting part 10 of the case main part 1, respectively. The ball hole 6a where these maintenance metal fittings 6 can insert the ball 4a of the ball chain 4 in the end of metal fittings is punched, and the slit hole 6b which can stop [ that the link 4b of the ball chain 4 can be inserted in this ball hole 6a and ] Ball 4a is opened for free passage. Moreover, the crevice 6c which fits into the ribs 21 and 11 of the transmission-and-reception machine 2 and the case main part 1 turns off and lacks the maintenance metal fittings 6.

[0015] In order to connect the case main part 1 and the transmission-and-reception machine 2 of an interphone with which such transmission-and-reception machine fall prevention structure is applied with the spiral code 3 and the ball chain 4, the maintenance metal fittings 6 are made to engage with each end of the ball chain 4 first. That is, the maintenance metal fittings 6 make the link 4b which connects with the ball hole 6a after insertion, and has connected the ball 4a of the ball chain 4 with the ball 4a made to insert in in the slit hole 4b insert in, and are made to engage with the ball chain 4, as shown in drawing 1 (b).

[0016] [ this ball chain 4 / while was engaged and / the rib 11 with which the fitting part 10 of the case main part 1 has the crevice 6c of the maintenance metal fittings 6 ] It fits in so that the ball chain 4 may connect the case main part 1 and the transmission-and-reception machine 2 to the rib 21 with which the fitting part 20 of the transmission-and-reception machine 2 has the crevice 6c of the maintenance metal fittings 6 of another side, respectively. Next, it fits into the rib 21 concerned so that it may overlap with the maintenance metal fittings 6 which fitted into the rib 11 concerned so that one bushing 5 of the spiral code 3 might be overlapped with the maintenance metal fittings 6 which have fitted into the rib 11 of the case main part 1, and have fitted the bushing 5 of another side into the rib 21 of the transmission-and-reception machine 2. In addition, the length of the ball chain 4 is set as the grade which does not collide on a floor, when the transmission-and-reception machine 2 connected to the case main part 1 in spiral code 3 falls. Thereby, when the transmission-and-reception machine 2 falls, it can prevent that the spiral code 3 develops.

[0017] Thus, since the maintenance metal fittings 6 are fixable to the case main part 2 and the transmission-and-reception machine 1 only by the bushing 5 of the spiral code 3 It is not necessary to fix using a screw in maintenance of the ball chain 4, and since \*\* does not need to let the ball chain 4 pass in the chain through holes 12 and 22 of the case main part 1 and

the transmission-and-reception machine 2, either, assembly processability improves.

Moreover, since it is not necessary to back-process such chain through holes 12 and 22, the cost rise and time-for-delivery delay accompanying post-processing are avoidable. Therefore, it can produce now in low cost and quick delivery.

[0018] In addition, although the ball chain was used as flexible line material in the example of a form of the desirable operation in the transmission-and-reception machine fall prevention structure of this invention mentioned above Not only this but the chain of other kinds, a wire, a string, rubber, etc. can be used, and what is necessary is just to fit suitably a means to hold to maintenance metal fittings also in which flexible line material.

[0019]

[Effect of the Invention] Since the maintenance metal fittings holding each end of flexible line material are fixable to a case main part and a transmission-and-reception machine only in a spiral code fitting part according to the transmission-and-reception machine fall prevention structure of this invention so that clearly from the above explanation Assembly processability is raised and it can produce now in low cost and quick delivery.

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[Translation done.]